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**STUDIES OF THE TYRANNIDÆ.—PART I. REVISION OF THE SPECIES OF MYIARCHUS.**

BY ELLIOTT COUES.

A complete and perfectly satisfactory account of this family can only be rendered by some one who has access to the principal European collections as well as those of this country. But if the large amount of United States material is thoroughly worked up, it may become an important contribution to the urgently needed monograph of the future. The present is the first one of a series of papers in which more or fewer of the genera of *Tyrannidæ* will be considered as time and circumstances may allow. The basis of these "studies" should be explicitly stated. The investigation is grounded, first, upon the entire Smithsonian series, which, in the liberal policy pursued by the authorities of that institution, is placed in my hands; and probably, in the end, the specimens will be made up in sets, labelled in accordance with my views, and distributed to home and foreign societies. Through the friendly offices of Mr. J. A. Allen, the whole collection of the museum of Comparative Zoology has been sent to me. The large suite of the Philadelphia Academy is examined, as well as the Lafresnaye types and other specimens in the Boston Society's Museum; while I have received, through the courtesy of Dr. Brewer and Prof. Hyatt, such specimens as the rules of the society permit to leave the building. Mr. Lawrence generously places the fly-catchers of his private cabinet at my service; they represent all his types and many other indispensable examples. Prof. Orton has promptly signified his willingness to transmit, from the extensive collection of Vassar College, Poughkeepsie, such specimens as I may desire to inspect. Others are derived from my own cabinet and miscellaneous sources. Since it does not appear that there is any important material in southern or western cities, what is just recounted virtually represents the gross amount available in the country; and what this is may be inferred by the fact, that the specimens of *Myiarchus* alone are over two hundred in number.

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## GENUS MYIARCHUS CABANIS.

*Myiarchus*, Cab., Fn. Peruv. 1844, 153. Type *Muscicapa ferox*, Gm.  
*Despotina*, Kaup, ?—, 1851.<sup>1</sup> Type — — —?  
*Kaupornis*, Bp., ? Ateneo Italiano, 1854. Type *Myiobus stolidus*, Gosse.  
*Blacicus*, Cab., J. f. O. 1855, 480. Type *Myiobius tristis*, Gosse.  
*Myionax*, Cab., Mus. Hein. ii. 1859, 73. Type *Muscicapa crinita*, L.  
 Non *Myiarchus* apud Bp. Consp. Av. i. 188.  
*Muscicapa*, *Tyrannus*, *Tyrannula*, ALIQUORUM.

The genus, so called, rests upon no structural characters, while its synonyms are among the vagaries of ornithology. But the term is a convenient designation of a group of flycatchers modelled in the likeness of *Muscicapa crinita*, L. They stand near *Tyrannus* proper, and closely resemble the olivaceous, yellow-bellied species ("Laphyctes") of the latter, such as *verticalis*; but are distinguished by not having the outer primaries emarginate, nor the wings longer than the tail, nor a flame-colored crest. The bill and feet of the two genera do not differ noticeably; or rather, these members, in the species of *Myiarchus*, vary as much *inter se* as the difference between *Myiarchus* and *Tyrannus* in the same respects.

But the distinction between *Myiarchus* and *Tyrannus*, due to the tolerably strong features of the latter genus, is considerable, compared with the differences subsisting between *Myiarchus* and several allied olivaceous flycatchers. Color aside, there are no substantial characters by which the *Myiarchi* can be distinguished generically from "Empidias" *fuscus*, "Empidonax" *acadicus*, "Myiodynastes" *audax*, and others, among which I am not sure that some forms with which I am at present unacquainted may not fall in *Myiarchus* as defined for the purposes of this paper.

In the matter of external anatomy, or contour, we can only say that *Myiarchi* are rather large tyrannulas, with the nearly even tail so lengthened that when measured inside the coccyx it equals or rather exceeds the wing in length; with the wing rather short, and its point formed by the third, or third and fourth quills, closely supported by the second and fifth, the first being only as long as the inner primaries; with the bill of the most ordinary tyrannuline shape, a little more or less than half its own length

<sup>1</sup> I quote this and the following name on Gray's authority, having no means of verifying the references.

broad opposite the nostrils, and a little shorter than the tarsus, which latter somewhat exceeds the middle toe and claw in length; and with the occipital and coronal feathers somewhat lanceolate and lengthened into a slight crest.

Coloration is a good arbitrary clue to the genus. The upper parts are more or less olive, sometimes clear and bright, sometimes grayish or brownish; the throat is more or less ashy, variable in shade; the belly is more or less yellow, from a rich shade to a mere trace; and the wing and tail feathers are marked with rufous, sometimes intense, and occupying the whole of certain feathers, sometimes reduced to a mere trace; but even in those species, in which it is at a minimum, it may be detected in some specimens. If one will lay the following birds side by side, one will see this distinctive brand of coloration running through them all, though at first sight such a form as *antillarum* does not particularly resemble *validus*. The *Tyranni* afford a parallel series between extremes, from the most olivaceous yellow-bellied species, like *verticalis*, to the dark ashy white-bellied *carolinensis*. Still, in a certain per cent. of specimens of several *Myiarchi* the rufous is ordinarily imperceptible.

Judged by the foregoing standard, "*Blacicus*" *tristis* is a pure *Myiarchus*; in fact, it is the insular representative of *nigriceps*, as *stolidus* is of *lawrencei*. "*Blacicus*" *pallidus*, however, falls under "*Contopus*," owing to the smallness of the feet. "*Tyrannus*" *antillarum*, Bryant, referred by Gray to typical *Tyrannus*, is certainly a true *Myiarchus*, being simply an insular variety of *M. stolidus*. But this error of Gray's is a slight matter, compared with his assignment of *stolidus* itself to an entirely different genus of another sub-family; this bird being pure *Myiarchus*, only specifically distinguishable from *M. lawrencei* as its insular representative. I know nothing of the "*Onychopterus tuberculifer* Lafr." which Gray interpolates betwixt the larger and smaller species of typical *Myiarchus*; but I suspect it does not belong just here. Likewise I have not seen four other species ascribed to the genus, viz.: *tricolor*, *cantans* and *gracilirostris*, Pelzeln, and *fasciatus*, Landb.; so I cannot say whether or not they fall in the group as here defined; but there is little, if any doubt, that they belong here. Excepting these, I have before me, I believe, types or typical specimens of all the described species of *Myiarchus*; and these I purpose to elaborate in this paper. And that I may not be mis-

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understood in my method of treating them, I will state explicitly that I am governed, on this occasion, by the following arbitrary rules or definitions:—

I. I predicate “species” upon specimens presenting any definite, constant, tangible characters whatsoever, that do not, so far as it appears, grade into the characters of other specimens.

II. I predicate “varieties” upon specimens presenting indefinite and inconstant yet tangible characters that are seen to grade into the characters of other specimens.

III. I predicate “synonyms” upon specimens presenting indefinite, inconstant, and intangible characters due to individual peculiarities, or to age, sex, season, or locality; as well as upon specimens presenting no special characters at all.

My present belief is, that there are only four<sup>1</sup> forms of *Myiarchus* that do not intergrade, and that are differentiated from a common original stock to such degree, or in such manner, that we cannot account for their respective peculiarities according to highly probable laws of geographical variation depending upon differences in food, climate, etc.; but I cannot here enter upon debatable ground. According to the foregoing practically convenient if not very scientific rules, I find that the specimens examined represent nine species, two of which each present three tangible varieties.<sup>2</sup>

Before proceeding to handle these species and varieties I will recount several propositions that should receive due consideration.

a. The normal inherent variability in size, of the whole bird and of its several members, is at least 12 per cent. of the mean. (This is independent of all extraneous influences.)

b. Size varies in direct ratio with the latitude of the breeding place.

c. Size of peripheral parts, as compared with total size, varies

<sup>1</sup> One is the series comprising *crinitus*, *validus*, *cinerascens*, *tyrannulus* and *phæocephalus*; the second is *lawrencii* and *nigriceps*; the third, *stolidus*; fourth, *tristis*.

<sup>2</sup> In defining these varieties, as I do beyond, I must not be taken as meaning that the characters assigned always apply in full force: that would be *primâ facie* evidence of species. On the contrary, I describe the extreme phase of variation, which shades by insensible steps into the “typical” condition of the species.

in inverse ratio with the latitude of the breeding-place.<sup>1</sup> (Cf. Allen, Bull. Mus. Comp. Zool. ii. p. 229)

*d.* The ♀ is generally a little smaller than the ♂.

*e.* Intensity of coloration varies in direct ratio with the temperature and humidity of the breeding-place. Moisture, however, intensifies color more than heat; aridity tones down color more than cold. Birds from hot dry places, therefore, are paler *cæteris paribus*, than birds from wet places of the same or even lower temperature. (Cf. Allen, op. cit. p. 239.)

*f.* The rufous coloration belongs to the category of what some call "embryonic features," in the sense that it generally decreases with age. Young birds are suffused with rufous to an extent rarely if ever seen in the old; this is shown both in the greater extent of the color on the quills and tail, and in the modification of the olivaceous by admixture, young birds being "browner" than the old.

*g.* In the adult state, the freshest plumage is the most olivaceous, as the feathers wear browner with exposure.

*h.* The yellow coloration increases with age to a certain extent; and in the fall is at least as bright as, if not brighter than, in spring, in equally mature birds.

*i.* The sexes do not differ in color to a recognizable degree.<sup>2</sup>

*k.* Variation unconnected with age, sex, or season, is in inverse ratio with the migration or changeable geographical distribution of individuals.

This last important generalization is well illustrated in the cases of *crinitus* and *stolidus*. The former is the most extensively dispersed species of the genus, being found at different seasons from Guatemala to New England. As its individuals are never con-

<sup>1</sup> But certain localities produce larger bills, in opposition to this rule, or show greater variability in the size of the bill, according to influences at present unknown; *e. g.*, the large bills of the Tehuantepec *Myiarchi*; the extremely variable bills of the Jamaican *M. stolidus*.

<sup>2</sup> An unquestionable fact, in its application to *crinitus* and some others. Authors, however, speak of color-differences in the sexes of the South American species, *ferox*. I have been unable to verify such statements, and think that a point of *age*, not of sex, is involved, younger birds having rufous that afterward disappears. If so be it, that such sexual differences really subsist in the case of *ferox*, then my entire characterization of that species falls to the ground, and the bird cannot be specifically distinguished from the variety of *crinitus* that I call *irritabilis*, beyond.

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tinuously subjected to local modifying influences of a special kind, it preserves its peculiarities intact; specimens from the extremes of its range are utterly indistinguishable. But the non-migratory individuals of Mexico, belonging to the same *crinitus* stock, present recognizable local varieties; whilst *M. stolidus*, a thoroughly localized bird, stationary in several places, has developed several sharply distinguished insular races peculiar to the islands they respectively occupy.<sup>1</sup>

I can offer no satisfactory explanation of the fact that several species of the genus are distinguished by the amount of rufous coloring, though I suspect it may be referable to proposition *e*, considering fuscous a "more intense" coloration than rufous. Certainly the northernmost bird, *crinitus*, and the bird of the New Mexican deserts, have the most rufous of any continental forms. The extent of rufous decreases even in the Mexican varieties of *crinitus*, is still less in *lawrencii*, and almost or quite disappears in the purely tropical *nigriceps*, *ferox*, and *phæocephalus*. But even continental specimens of an opposite character occur, whilst the insular species, *validus* and *stolidus*, offer completely rebutting testimony.

This general question of the production of the rufous aside, study of these birds makes it evident that large allowance must be granted for purely individual—commonly called "accidental"—differences in amount or intensity of the rufous in specimens of the same species. Though it is certain that, for example, *validus*, *cinerascens*, and *crinitus*, with its varieties, may each be recognized with tolerable facility by their respective patterns of the rufous, whether occupying the whole, or a small part, or a different part of the inner webs of the rectrices, yet it is equally certain that no such slight distinctions as its occupying a fourth, a fifth, or a sixth of the web, fading insensibly or changing abruptly into the fuscous, etc., can be relied upon at all. Among the varieties of *M. stolidus*, indeed, we can trace the restriction of the rufous by insensible degrees, from its occupying two-thirds of the inner web to its narrow edging of the feather, and finally to its forming a mere trace at the end. Moreover, the rufous differs so much in

<sup>1</sup> Cf. remarks upon the more stationary forms of *Aegiothus*, as compared with the most nomadic individuals (*linarius*) of the genus. Coues, P. A. N. S. P. 1869, p. 182, *et seq.*

extent and even in pattern in the same individual at different stages of plumage, that we can only compare age for age and season for season with any success in determination of specific characters. It is most probable that even the wide limits I set for variability in this respect, due to age, season, and individual peculiarity, will require to be somewhat enlarged.

The foregoing paragraphs must not be construed as any attempt to undervalue the interesting and sometimes extremely curious characters distinguishing the several species. Though in the following pages I may appear to have "unnecessarily," if not unwarrantably, reduced the number of species, yet I am persuaded that no unprejudiced ornithologist could have reached different conclusions upon study of the same material. It may be well to remember that two hundred specimens of *Myiarchus* have never before been examined by one person at a *coup d'œil*; and I really think that with two thousand specimens instead of two hundred, I should not be able to establish as many species as are here allowed. Others will judge whether I have placed the species here discussed upon sure footing; I simply ask for impartial criticism.

1. *MYIARCHUS VALIDUS*.

*Tyrannus crinitus*, Gosse, B. Jam. 186; nec auct.

*Myiarchus validus*, Cab., Orn. Not. ii. 351, et auct.

*Myiornis validus*, Cab., M. H. ii. 73.

*Pyrocephalus (Myiornis) validus*, Gr., H.-L. No. 5520.

*Tyrannula gossii*, Bp., C. A. i. 189.

*Red Petchary*, Anglicè.

M. inter majores, rostro crasso, tarsum æquante; coloribus intensis; olivaceo-fuscus, gulâ cinereo-plumbea, hinc ventre sensim sordide flavido; remigibus, rectricibus tectricibusque alarum superioribus et intus et extus rufomarginatis, tectricibus alarum caudæque inferioribus rufescentibus. Long. tot. 7.50-8.50, alæ et caudæ 3.80-4.20, tarsi et rostri .80-.90, digiti 3tii cum ungue .70-.80; rostri latitudo ad nares .35-.40. (Poll. Angl. et dec.)

*Hab.*—Ins. Jamaica. (Mus. S. I. et G. N. L.)

*Obs.*—A stationary localized form which by isolation from its allies and continuous subjection to special modifying influences, has become so far differentiated as to be recognizable on sight, and which is not now known to intergrade with its nearest ally, *crinitus*.

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The bill is nearly at the maximum size for the genus, is largely light-colored at base below, and not perfectly black elsewhere, as in var. *cooperi*, another subtropical form. The rufous coloration is at the maximum both of intensity and extent; it occupies a part or the whole of every single feather of the wings and tail and their coverts; it is intense on the outer edges of the primaries, paler on the inner edges of these and other remiges, paler still (yet not whitish) on the outer edges of the inner remiges; it tips and edges all the upper coverts, and suffuses all the under coverts, both of wings and tail; it usually occupies the whole outer rectrix, and whole inner web of the other rectrices (saving the middle pair), excepting a narrowest possible shaft line; moreover, it narrowly edges the outer webs of the rectrices. In fact, the tail might be described as rufous, with the central rectrices and a narrow shaft line on the others, fuscous. Nothing like this is known to occur in any continental form. Likewise the bird has a peculiar sordid aspect below, arising from impurity both of the ash and the yellow; which colors have no definite line of separation.

Jamaica the only recorded locality.

No synonymical questions involved.

Specimens examined, five.

## 2. MYIARCHUS CRINITUS.

### a. VAR. *crinitus*.

*Muscicapa crinita*, L., S. N. i. 325.

*Tyrannus crinitus*, Sws., Quart. J. xx. 1826, 271.

*Myiobius crinitus*, Gr., G. B. i. 248.

*Tyrannula crinita*, Bp., C. A. i. 189.

*Myiarchus crinitus*, Cab., J. f. O. iii. 1855, 479, et auct.

*Myionax crinitus*, Cab., M. H. ii. 73.

*Myiarchus (Myionax) crinitus*, Scl., C. A. B. 232.

*Pyrocephalus (Myionax) crinitus*, Gr., H.-L. No. 5518.

*Muscicapa ludoviciana*, Gm., S. N. i. 934.

*Tyrannus ludovicianus* V., O. A. S. i. pl. 45.

*Muscicapa virginea*, Müll. (G. R. Gr.)

*M. virginea cristata*, Briss. Orn. ii. 412. P. E. 569, f. 1. (G. R. Gr.)

*Crested Flycatcher*, Anglicè.

M. inter majores, rostro modico, tarso brevior, coloribus claris; olivaceus, gulâ cinerea, hinc ventre, crisso tectricibusque alarum inferioribus flavis; remigibus primariis et extus et intus, rectricibus (mediis exceptis) intus nec extus rufomarginatis; rectrice exterior, remigibus secundariis, tectricibusque alarum superioribus flavidal-1872.]

bido marginatis, in pogoniis rectricum interioribus colore rufo latissimo, fusco angustissimo, lineâ rectâ segregatis; rostro fusco, infra ad basin pallido. Long. 7.50-8.00, alæ et caudæ 3.80-4.20, tarsi .75-.85 (nunquam .90?), digiti 3tii .65-.75, rostri .70-.80, rostri lat. .33-.40.

*Habitat* æstiv. partibus orient. Reip. Amer. Sept., hyeme Amer. Centrali, præsertim Guatemala. (Costa Rica, Lawr., Ann. Lyc. 1868, 115.) Cuba? (Gundl., 239.) An Amer. Merid.?

*Obs.*—These references and diagnosis apply exclusively to the bird that breeds in the United States, entirely withdrawing in the fall to winter in Central America. This is pure *crinitus*; the birds that summer in Mexico and elsewhere south of the United States have developed other varieties (infra). During the extensive migrations, its passage seems rapid and its path narrow; for we have no Antillean (except as above) nor West Mexican quotations of the bonâ fide *crinitus*, and few Mexican skins are certainly referable to it. In passing from its winter headquarters, either it flies across the Gulf, or else it hugs the eastern coast of Mexico. I have yet to see typical *crinitus* from South America.

Diagnostic points to be remembered are these: bill never quite black; stout and comparatively short, hardly or not equalling the tarsus, which latter never (?) touches .90; back pure olive, throat pure ash, belly, etc., pure yellow; inner secondaries and upper wing coverts and outer rectrix edged with yellowish-white (never rufous—*cf. validus*), in marked contrast with rufous edgings of primaries and inner webs of rectrices; all rectrices but the middle pair so nearly completely rufous on the inner webs that a mere line of fuscous persists next the shaft (*cf. irritabilis et cooperi*); this runs of equal breadth the whole length of the feathers (*cf. cinerascens*); it is sometimes inappreciable on some feathers (then about as in *validus*); none of the rectrices ever with more than a trace of rufous on the outer web.

About sixty specimens examined. (Mus. S. I., etc. etc.) Nearly all these not of the United States are Guatemalan, are positive duplicates of Pennsylvania skins, for instance, and were doubtless hatched in the United States. Other Guatemalan examples and many Mexican skins of birds that never saw the United States, represent different varieties, as follows.

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b. VAR. *irritabilis*.

*Tyrannus irritabilis*, Vieillot, Ency. Meth. 1823, ii. 847, ex Suiriri pardoy-rojo, Azara, Apunt. ii. 143, No. 195. Paraguay.

*Tyrannula irritabilis*, Bp., C. A. i. 189. "Amer. Merid. Parag."

*Myiarchus erythrocerus*, Scl. et Salv., P. Z. S. 1868, 631, 632. Venezuela.

*Myiarchus mexicanus*, Lawr., A. L. N. Y. ix. 1869, 202. Yucatan.

*Myiarchus yucatanensis*, Lawr., P. A. N. S. P. 1871, 235. Yucatan.

*Pyrocephalus (Myionax) erythrocerus*, Gr., H-L., No. 5522 ("crinitus p. Hartl.; *irritabilis* p. Bp.; *ferox* ♂, Burm.")

Num *Myiarchus mexicanus*, Kaup, P. Z. S. 1851, 51?

*M. Myiarcho crinito* ipsissimo simillimus, sed notæo aliquantulum obscuriore, gastræo aliquantulum dilutiore, rectricibus rufo et fusco fere dimidiatis! rostro modico, nec crassitie *M. cooperi* pari.

*Habitat* in America Centrali et Meridionali. Paraguay (*Page*; avis Azarana-Vieillotiana ipsissima! Mus. S. I., No. 16,349). Parana (*Page*; Mus. S. I., No. 16,348). Bahia (Mus. G. N. L.; spec. cum typo *erythroceri*, Scl., comparatum et identicum esse probatum). Venezuela (unde *erythrocerus* ipsiss.). Yucatan (Mus. S. I. et G. N. L. specimina typica *yucatanensis*, Lawr., 1871 = *mexicanus* Lawr., 1869). Guatemala (Mus. G. N. L.). Costa Rica (Mus. S. I., No. 29,423).

*Obs.*—This bird, so far from being specifically distinct from the ordinary North American form, is so extremely similar as to be with difficulty recognizable as a variety of typical *crinitus*. The size is the same; there are no evident nor constant differences in the relative proportions of bill, feet, tail, and wings, and the general colors only differ by a shade. The bill is exactly as in *crinitus*; having neither the elongate, constricted shape of *cinerascens*, nor the general bulkiness of var. *cooperi* and of *validus*. In most of my specimens it happens that the plumage is old and worn, so that these look browner or grayer on the back than is usual for true *crinitus*; but the Paraguay and Parana skins in better feather are not to my eye an appreciable shade different from several United States skins; the yellow below, however, is recognizably paler, and the gular ash seems to have a little more pectoral extension. There is, however, one obvious and nearly constant discrepancy in the pictura of the tail feathers, enabling me to predicate a variety. On an average the rufous and the fuscous on the inner webs of the rectrices are dimidiate—half-and-half in amount; this never occurs to my knowledge in United States *crinitus* (cf. descr.). The relative breadth varies as follows: The 1872.]

fuscous occupies from  $\frac{2}{3}$  to  $\frac{3}{4}$  in the type of "yucatanensis" and other skins of the same, shot at the same time by the same person; from  $\frac{3}{4}$  to  $\frac{1}{2}$  on different feathers of the tail of the Bahia specimen "compared with type of 'erythrocerus' in Mus. P. L. S.;" from  $\frac{1}{2}$  to  $\frac{1}{3}$  in the Parana and Paraguay skins; from  $\frac{1}{3}$  to  $\frac{1}{4}$  in some Central American skins; and then we have  $\frac{1}{5}$ — $\frac{1}{6}$  to nil in a Nicaraguan (S. I., No. 41,789) and in various North American skins. Comment is unnecessary.

As the foregoing synonymy may be regarded with mistrustful surprise, it becomes me to state my case explicitly. "*Tyrannus irritabilis* Vieill." is generally enumerated amongst the synonyms of *crinitus*—correctly so, leaving out of consideration the varieties of the latter. But Vieillot's bird, being based on Azara, is of course South American, and I have yet to see pure *crinitus* from that portion of the continent, all my South American specimens being characterizable as above. So we have "a local habitation and a name," as firm ground for further investigation.

I take the Nos. 16,349, 16,348 (Paraguay and Parana) as being unquestionably the Azara-Vieillot bird; they are both distinguishable from United States *crinitus* by the characters above detailed; but one of them has the fuscous stripe along the inner web much broader than the other.

Next, the Bahia skin (Mus. G. N. L.), as I see by the label, has been compared with the type of *erythrocerus*, in Mus. P. L. S., and found identical. It is in poor plumage, quite brownish above, and "streaky" below, and has the fuscous rather broader still, but there is less difference in the breadth of the fuscous in this specimen, and in No. 16,348, than there is between 16,348 and 16,349. All three are unquestionably identical. This fixes the status of "*erythrocerus*."

Then, the type of "yucatanensis" Lawr. 1871 (= "*mexicanus*" Lawr. 1869), now in my hands, has the rufous and fuscous exactly as in typical "*erythrocerus*," and is in other respects a duplicate of the latter. That Mr. Lawrence did not recognize this identity is doubtless due to the fact that his example of "*erythrocerus*" was not in his hands at the time. When he published "yucatanensis (based on the same Yucatan specimen he called "*mexicanus*" in 1869) he did so simply upon Dr. Selater's announcement that *mexicanus* Kaup was the bird called "*cooperi*" by Baird—quite a different variety, and usually held to be a different species.

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Thus we arrive at the above synonymy. I should add, in justice to an excellent young ornithologist, noted for discriminative abilities, that I am not the first to perceive the identity of the specimens here discussed. They are all labelled "mexicanus" in Robert Ridgway's handwriting—he having accurately distinguished them from the following larger, heavier-billed form from Southern Mexico. But Kaup's name, even if it belongs here, is clearly anticipated by Vieillot's.

Specimens examined, ten.

c. VAR. *cooperi*.

"*Tyrannula mexicana*, Kaup, P. Z. S., 1851, 51," auctoritate Sclateriana, fide Lawr., P. A. N. S. P. 1871, 235. *Non auctorum!*

*Tyrannula cooperi*, Kaup, P. Z. S. 1851, 51. *Non Muscicapa cooperi* Nuttall, quæ *Contopus borealis*.

*Myiarchus cooperi*, Baird, B. N. A. 180.—Scl. P. Z. S. 1859, 384; C. A. B. 233.—S. and S., Ibis, 1859, 122, 440.

*M. Myiarcho crinito* similis; maximus inter majores; rostro enormi, nigro; notæo obscuriore, gastræo dilutiore; fusco et rufo in pogoniis interioribus rectricum ferè dimidiatis. Long. rostri a fronte in apicem .80–1.00; alæ et caudæ 3.90–4.25; tarsi .85–.95; long tot. (exuviarum) 7.50–9.00.

*Habitat.*—Mexico, præsertim partibus merid.-occid. "Mexico" (Verreaux, Sallé, Mus. S. I.). Tehuantepec (Sumichrast, Mus. S. I. et G. N. L.). Mazatlan, Guadalupe (Grayson, Mus. S. I.). "Guatemala" (Mus. P. L. S., fide ejusd. Cat.).

*Obs.*—This variety is distinguished, in its extreme of development, from *crinitus* by the larger size, skins running up to nine inches; by the larger bill, which sometimes attains a length of an inch, and equals, or even slightly exceeds, the tarsi, which are themselves usually a tenth of an inch longer than in *crinitus*; by the olivaceous being not so clear as in *crinitus*, nor the under parts (usually) so bright yellow; and especially by the presence of a band of fuscous on the inner webs of the rectrices, varying from  $\frac{1}{5}$  or  $\frac{1}{4}$  to nearly  $\frac{1}{2}$  the width of the vanes. In its strongest differentiation, the variety looks very different from typical *crinitus*, but with only a dozen specimens on hand, I can trace it directly into *crinitus*, of which it is unquestionably a mere local race. It seems nearly confined to southern and southwestern Mexico; Sclater, however, quotes it from Guatemala.

The Mazatlan and Guadalupe skins are the two biggest *Myiarchi* I ever saw; one of them is marked "length (fresh)  $9\frac{1}{2}$ ;" their bills are enormous, comparing with ordinary *crinitus* almost as *Tyrannus magnirostris* or *crassirostris* do with *carolinensis*. They are scarcely different from *crinitus* in color, except in the definite fuscous stripe, about  $\frac{1}{3}$  the width of the inner web, on the tail feathers. The several Tehuantepec skins are essentially similar, but grade towards *crinitus*, or rather towards *irritabilis*, and in other skins the boundary line is too shadowy to be seen at all.

Of my own knowledge, of course I have no idea what the "Tyrannula mexicana" of Kaup is—for no one who has not seen the type can tell anything about it. But, according to Mr. Lawrence (*l. c.*), Dr. Sclater has recently examined the type, and announces it is what Prof. Baird called "cooperi" in 1858. Now I have in my hand the specimen (No. 9100, Mus. S. I., "Mexique," *Verreaux*) that furnished the account in the Birds of North America, and it is one of the large heavy-billed examples of true var. *cooperi* as characterized in this paper; that is to say, "mexicanus" Kaup, and "cooperi" Kaup, are one and the same thing, if Dr. Sclater has correctly apprehended Prof. Baird's article. I hardly see, however, how this can be, for Kaup must have *meant* to indicate two species or varieties, and it is reasonable to suppose his specimens showed *some* differences. My own surmise is, that the type of "mexicanus" is one of those intermediate specimens that Dr. Sclater could hardly help identifying with Baird's description of "cooperi," the latter's No. 9100 being by no means one of the largest-billed specimens; and it seems to be also Mr. Ridgway's opinion, to judge by his labelling, that "mexicanus" is rather referable to the smaller-billed variety above characterized under the name of *irritabilis*. However, the game is not worth the candle, since fortunately it proves that the name need not be used at all; and the sooner "mexicanus" is forgotten the better. It has caused vexatious mistakes enough already, four different authors having used it in as many different senses, in the vain attempt to identify something not identifiable.

Turning to a more inviting point, it is interesting to observe how many *Myiarchi* come to a focus, as it were, on and near the Isthmus, and thence radiate in all directions. First we have in winter the birds that breed in the United States, constituting true

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*crinitus*; another, non-migratory, set spreading for a short distance northwestward to form the local race *cooperi*, and yet another, chiefly spreading southward throughout the greater part of South America, forming the variety *irritabilis*. It is little, if any, beyond the southern terminus of *cinerascens*, forms the southern limit of *lawrencei*, and constitutes the northern boundary of *nigriceps* and *tyrannulus* (*ferox*). In fact, every continental species treated of in this paper, excepting *phæocephalus*, occurs between Tehuantepec and Panama; this is the very centre of the genus.

Specimens examined, twelve.

### 3. MYIARCHUS CINERASCENS.

*Tyrannula cinerascens*, Lawr., A. L. N. Y. v, 1851, 109 (descr. orig.).

*Myiarchus cinerascens*, Schl., Ibis, 1859, 121, 440; P. Z. S. 1859, 384;

C. A. B. 233 (excl. syn. *Tyr. mexicana*, Kaup).

*Myarchus mexicanus*, Bd., B. N. A. 179 (sed non *Tyr. mex.*, Kaup);

Coues, P. A. N. S. P., 1866, 59; Coop., B. Cal. i., 316, cum fig.

*Myionax mexicanus*, Cab., M. H. ii., 74 (non Kaup).

*M. mexicanus* var. *pertinax*, Bd., P. A. N. S. P., 1859, 303 (Cap. St. Lucas).

M. inter majores, rostro angusto, nigro; coloribus dilutis; olivaceo-cinereus, pileo brunnescentiore, gulâ ex albida cinerea, ventre sensim ex albido flavo; remigibus secundariis tectricibusque alarum superioribus albido marginatis; remigibus primariis rectricibusque rufo-indutis ut in M. crinito, sed rufo vix in apicem rectricum porrecto, et ab fusco lineâ curvatâ segregato. Statura M. crinito par, tarsis longioribus (.80-.90), rostro angustiore (.27-.33).

*Habitat* partibus Reip. Amer. S. merid.-occid., et Mexico.—Utah (*McCarthy*). Nevada (*Ridgway*). N. Mexico, Arizona (*Coues*). California (*Cooper*). Cap. St. Lucas (*Xantus*, "var. *pertinax*"). Texas (*Couch*). Mazatlan (*Grayson*). Mirador (*Sartorius*). Tehuantepec (*Sumichrast*). Orizava (*Botteri*). Mus. S. I., G. N. L., E. C., etc.

*Obs.*—One of the better marked species of this difficult group. I have seen no indeterminable specimens, though I suspect that questionable ones will yet appear from southwestern Mexico. But the fact that the bird occurs there associated with varieties of *crinitus* without losing its distinctive features, favors the supposition of its integrity.

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The most reliable peculiarity of *cinerascens* is the *contour* of the rufous on the rectrices. In all other *Myiarchi* examined the rufous, no matter how broad or how narrow, is straight-edged against the fuscous from base to tip; but in *cinerascens* it occupies the whole inner web for about  $\frac{1}{2}$  or  $\frac{2}{3}$  the length of the feather, and then bends inward to give way to fuscous that consequently possesses most or all of the tip of the feather. It is a curiously slight matter to be so constant as it appears; and it is not absolutely invariable. Thus, in U. S. specimens, constituting the best-marked examples, the rufous is commonly altogether shut off from the end of the feathers, while in Tehuantepec skins the rufous gains the very tip, being but little encroached upon by the fuscous. However, even in these specimens, which barely escape being troublesome, the peculiar pattern *is* exhibited. But in no case do other than *adult* birds show the peculiarity; *e. g.*, in No. 1595, Mus. E. C., shot from the nest in Arizona, the wings and tail are nearly as rufous as in *validus*! the margins of all the remiges and upper wing coverts, and all the tail feathers are rufous, the rectrices having each merely a narrow shaft-line of fuscous; the upper parts are grayish-brown, without olive; the cap warm pure brown, the belly white, slashed with yellow.

But *cinerascens* has other marks, none of them infallible, all of them nevertheless useful. It is the *palest Myiarchus* of all. The upper parts are gray, merely suffused with olive, and browner on the head; the gular ash is gray and hoary; the belly very pale yellow, or yellowish-white, without sharp demarcation from the hoary on the breast; the margining of the inner secondaries and wing coverts is grayish-white (not yellowish nor ochrey-white); the bill is almost perfectly black. My palest birds come from the United States deserts and from Cape St. Lucas; here the olive above and yellow below are barely appreciable. Tehuantepec and Mazatlan birds are the brightest; here the yellow is almost as pure as in *crinitus* (and these, it will be remembered, are the ones with rather dubious tail-coloration).

There is nothing diagnostic in the size or shape of this bird, but several tangible characters are *usually* exhibited. Compared with *crinitus*, the bill has a constricted, somewhat more terete shape; probably it is rarely if ever quite half as wide as long opposite the nostrils. The tarsi average longer, frequently touching .90. The wings average a little shorter relatively, and the tail a

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trifle longer, the latter exceeding the former, on an average, .10 to .25, instead of equalling the wings.

Var. "pertinax" not distinguishable even as a local race; the specimens vary *inter se*, and some of them are perfect duplicates of my Arizona skins. The yellow-bellied Tehuantepec bird comes much nearer the requirements of a geographical variety.

Baird's erroneous identification of Kaup's "mexicana" is perfectly excusable, and, indeed, was well nigh unavoidable under the circumstances. Kaup's careless notice is worthless for all practical purposes, and we have to thank Dr. Sclater for telling us what his bird really is. (Cf. Lawr., P. A. N. S. P., 1871, 235.) Other American writers copied Baird's mistake. This point settled, the synonymy of the bird is plain, Mr. Lawrence's original description being perfectly satisfactory.

Specimens examined, thirty-five, from the above-mentioned and intermediate localities.

#### 4. MYIARCHUS TYRANNULUS.

*Muscicapa tyrannulus*, Müll. (G. R. Gr., H.-L. No. 5527.)

*Muscicapa aurora*, Bodd., P. E. 571, f. 1. (G. R. Gr.)

*Muscicapa flaviventris*, Steph. (G. R. Gr.)

*Muscicapa ferox*, Gm., S. N. i. 934, e Buff. l. c. Max. Beitr. iii. 285.

*Tyrannus ferox*, Vieill., Enc. Met. ii. 848; Sws., Quart. J. xx. 1826, 276; D'Orb., Voy. Ois. 306.

*Myiarchus ferox*, Cab., Orn. Not. i. 248; Schomb. Guiana, iii. 700; M. H. ii. 73; Burm., Syst. Uebers. ii. 470; Scl. P. Z. S. 1855, 150; C. A. B. 233.

*Myiarchus swainsoni*, Cab., M. H. ii. 72. (Specim. Braziliana.)

*Myiarchus panamensis*, Lawr., A. L. N. Y. vii. 1860, 284, 295. (Spec. e Panama et N. Grenada). Id., ibid. ix. 1868, 115. (Costa Rica.)

*Myiarchus venezuelensis*, Lawr., P. A. N. S. P., 1865, 38. (Sp. junior. e Venez.)

M. inter majores, rostro modico; olivaceo-fuscus, gulâ cinereâ, ventre flavo, alis caudâque fuscis, haud rufo indutis, rectricibus concoloribus, remigibus primariis intus, secundariis ex intus et extus, flavido marginatis. Long tot. 7-7.75; alæ 3.30-3.70, caudæ 3.50-3.90, tarsi .80-.90, rostri .65-.75.

*Habitat*.—Amer. Cent. et Merid. Panama (*Hicks, McLeannan, Galbraith*, Mus. G. N. L.). Venezuela (*Nash*, Mus. G. N. L.). New Granada (*Schott*, Mus. S. I.). Costa Rica (*Arcé*, Mus. O. S., fide Lawr. l. c.). Para, Bogota, Trinidad, Tobago, Bolivia (Mus. P. L. S.,

fide ejusd. Cat.). Bahia (*Bryant*, Mus. S. I.). Brazil (Mus. L. Agassiz).

*Obs.*—The ordinary South American *Myiarchus* is distinguished at a glance from all the foregoing by the reduction of the rufous edging of the rectrices and primaries to a mere trace, or its entire absence.

This bird averages a little smaller than *crinitus*; the bill is shaped and colored exactly as in that species, but is rather smaller; the wings are shorter, both absolutely and relatively, not often quite equalling the tail; the tarsi, on the contrary, are a little longer. In these respects the bird tallies to a nicety with *cinerascens*.

The colors are rarely if ever as bright and clear as in *crinitus*. There is generally a mere trace of rufous on the outer edges of the primaries and rectrices, and in younger birds is quite noticeable; but I have never seen a touch of it on the inner webs of the rectrices. The outer edges of the wing coverts and inner remiges, and the outer edges of the outer rectrices, and the inner edges of the remiges, are whitish or pale yellowish; otherwise the wings and tail are concolor and unicolor.

With both Mr. Lawrence's types, a typical Brazilian *swainsoni* labelled in Dr. Sclater's handwriting, and various unquestionable *ferox* before me, I cannot distinguish even a geographical variety among them all. They are indisputably identical.

*Swainsoni* is one of those constantly recurring cases of the attempt to distinguish Brazilian individuals from specimens of the same species from northern South America. Sometimes, I know, local influences have produced modifications recognizable as geographical varieties, and I am willing to admit in this case that *swainsoni* may run a shade darker, and possibly average a trifle larger than ordinary *ferox*; but the difference is not even tangible, much less reasonably constant. Birds from either locality differ as much among themselves as they do from each other; and some specimens of *swainsoni* are more like *ferox* than they are like other specimens of *swainsoni*.

*Panamensis*, as originally described, was compared with *crinitus* and *cinerascens*, and its striking differences correctly indicated. But I am persuaded that if Mr. Lawrence had compared it with *ferox*, he would have been satisfied of its identity with the latter.

*Venezuelensis* is based upon a youngish bird, which, as usual

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in this genus (see above), shows more rufous than is retained in adult life. The outer webs of the rectrices show quite a rufous edging; but there is none at all on the inner webs; and in all other respects the specimen is a perfect duplicate of some skins of *ferox*.

The older names above quoted, including the one it seems necessary to adopt for the species, are given upon Gray's authority. I have not been able to look up the references, but I presume there is no doubt of their pertinence.

Specimens examined, thirteen.

5. MYIARCHUS PHÆOCEPHALUS.

*Myiarchus phæocephalus*, Schl., P. Z. S. 1860, 481; C. A. B. 233.  
(Babahoyo, Ecuador.) Lawr., A. L. N. Y. ix. 1869, 237. (Guayaquil.)

M. inter majores, rostro modico; olivaceus, caput versus cinerascens, gulâ cinerea, ventre flavo, pileo alis caudaque fuscis, his non rufo notatis, remigibus interioribus rectricibusque exterioribus extus albido marginatis; staturâ *M. crinito* par?

*Hab.*—Ecuador (*Fraser*, Mus. P. L. S., fide Cat. A. B.). Ins. Puna, Guayaquil (*Reeve*, Mus. S. I., No. 54,083).

*Obs.*—My material is insufficient for a satisfactory determination in this case, but the species is different from any other, so far as I can judge from the single imperfect specimen before me, labelled *phæocephalus* in Lawrence's handwriting, which is the basis of his citation, *l. c.* It is apparently an old bird moulting, the quills and tail feathers being ungrown. The wings and tail are blackish with the whitish edgings above mentioned, and are without a trace of rufous; in these respects the bird is like *ferox*, but there the resemblance ends, *phæocephalus* being clear olive, much like *crinitus* on the back, shading on the head and neck into olivaceous ash, not very different from that of the throat. The pileum shows quite dusky in contrast. The whitish edgings of the remiges and outer tail feathers are strong. The dimensions cannot be given exactly, but the bird seems to have been nearly 8 inches long, with the wing and tail each about  $3\frac{3}{4}$ ; the bill measures .75 from the front, the tarsus .90.

Additional information respecting the bird is desirable, since there is room for suspicion that it is a local race of the preceding.

## 6. MYIARCHUS LAWRENCII.

*Tyrannula lawrencii*, Gir., 16 Sp. Tex. B. pl. 2.

*Myiarchus lawrencii*, Baird, B. N. A. 181, pl. 47, f. 3. Sci., P. Z. S. 1859, 366, 384. Id. et Salv., Ibis, 1859, 121, 440. Taylor, ibid. 114. Lawr., A. L. N. Y. ix. 1868, 113. Id., ibid. ix. 1869, 204.

*Blacicus lawrencii*, Bd., B. N. A. 182.

*Pyrocephalus (Myiarchus) lawrencii*, Gr., H.-L. No. 5525 (cum 5529).

*Myiarchus mexicanus*, Sci., P. Z. S. 1856, 296.

*Myiarchus rufomarginatus*, Cab., M. H. ii. 73.

*Myiarchus nigricapillus*, "Cab. MSS." (e specim. costaricensibus; cf. J. f. O. 1861, 249), apud Sci., C. A. B. 233. Lawr., A. L. N. Y. ix. 1868, 113; recte haesitat!

M. inter minores, rostro lato depresso; fusco-olivaceus, pileo statim fuscescente, gulâ cinerea, ventre statim flavissimo; remigibus tectricibusque et extus et intus rufomarginatis, rectricibus omnibus semper extus, creberrime necnon intus rufomarginatis. Long. tot. 6-6.75; alæ et caudæ 3.00-3.33, rostri .62-.70, tarsi .65-.75.

*Habitat*.—Mexico et Amer. Cent. Texas? (auct. *Giraud*.) N. Leone (*Couch*, apud Baird). Colima (*Xantus*). Mazatlan (*Grayson*). Orizava, Tehuantepec (*Sumichrast*). Guatemala (*Salvin et al.*). Merida (*Schott*). Grecia, Barranca, Angostura (*Carmirol, Frantzius*).

*Obs*.—With much the same strong olive, clear ash, and rich yellow that characterize *crinitus*, *lawrencii* is distinguished on sight by its smaller size; pileum generally dark, in strong contrast to the back; wing coverts and inner secondaries edged with much the same rufous as the primaries are (as in *validus*), and very narrow rufous edging of the tail feathers, often wanting altogether on the inner webs, and almost always stronger on the outer webs than on the inner ones. In young birds the edging of the inner webs is usually very noticeable, but it is never, so far as I have seen, so broad as is usually the case with the associated continental species and varieties; never half the breadth of the vane. Furthermore, the bill of *lawrencii* departs from the thick, deep, heavy style of the larger *Myiarchi*, and is broad and flat nearly as in the smaller olivaceous flycatchers, such as *Contopus* and *Empidonax*. It varies much, as usual, in precise shape, but is generally just about half its own length broad at the nostrils.

Mr. Lawrence has already very properly called attention to the fact, that the supposed *M. nigricapillus* of Dr. Cabanis offers no tangible specific characters; while for myself I cannot make out

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that it is even a recognizable variety. It is true that in *Costarica lawrencii* tends to be a little darker on the pileum, with the yellow a little more extensive; but it is also true that these characters will not decide the status of ten per cent. of current specimens. *Nigricapillus* is simply a slight tendency towards *nigriceps*.

The normal variations in size and color are precisely parallel with those already discussed under head of *M. cinerascens*. Northern and western specimens average a trifle paler than usual; the southernmost are the brightest. Sometimes the edgings of the inner remiges and the coverts are whitish. Tehuantepec skins show the stoutest bill; this is likewise the case in *crinitus* var. and *cinerascens*, showing the uniform operation of some unknown local influences. One example (34,810, Mus. S. I., Costarica) has exceptionally short wings and tail, these members measuring only 2.80 and 2.90 respectively.

Specimens examined, thirty-three. The bird seems to range throughout Mexico and Central America. I have never seen a United States skin, and though the species may overstep the Mexican boundary, this remains to be shown. Probably Giraud's bird came from Northeastern Mexico, as some others of his sixteen "Texas" birds certainly did.

7. *MYIARCHUS NIGRICEPS*.

*Myiarchus nigriceps*, ScL., P. Z. S. 1860, 68, 295; Cat. A. B. 234 (Ecuador). Lawr. Ann. Lyc. 1861, 327 (New Grenada).

*Myiarchus brunneiceps*, Lawr., l. c. (nomen pro temp.).

M. inter minores, rostro lato depresso; clarè olivaceus, pileo statim nigricante, gulâ restricta clarè cinerea, pectore et ventre flavissimis; alis caudaque fusco-nigris, hâc innotatis, illis minime rufalbida marginatis. Long. tot. 5.60-6.25; alis et caudæ 2.90-3.10, rostri .60-.65, tarsi .65-.70, rostri lat. ad basin .30.

*Habitat*.—Ecuador (Pallatanga, Esmeraldas, *Fraser*, fide ScL., l. c.; Quito, *Backalew*, Mus. S. I.). Panama (*McLeannan* and *Galbraith*, Lawr., l. c.). Mus. G. N. L. and S. I.

*Obs*.—Distinguishable on sight from *lawrencii* by the black or blackish cap, in marked contrast with the clear olive back, extension of the rich yellow high up the breast, and particularly by the absence of rufous on the tail; in this respect comparing with *lawrencii* just as *ferox* does with *crinitus*. The wings, as usual in the genus, share the extinction of rufous on the tail; a mere rufous trace can only be detected in some specimens on the outer 1872.]

edges of a few primaries, the inner edges of which, however, show it a little more plainly. For the rest, the secondaries and coverts are evidently ochrey-whitish margined. The bird will average smaller than *lawrencii*, but the difference in size is not marked.

The three specimens examined, one of them the basis of Mr. Lawrence's remarks upon the proposed "brunneiceps," which he has since abandoned, are absolutely identical. Having no doubt that *nigriceps* is simply a geographical representative of *lawrencii*, I fear that troublesome specimens will yet occur from intermediate localities. But the differentiation has become perfectly tangible, and I have seen no connecting links, so that I can indorse the species, upon the principles already laid down for my guidance in this paper.

#### 8. MYIARCHUS STOLIDUS.

Notandum: species flexibilis, per insulas Antillarum singulatim diffusa, in stirpes locorum varios secreta, characteres tamen communiter præbentes, ut sequuntur. Statura maxima inter species minores generis; long. tot. 6.50-7.50, alæ et caudæ 3.00-3.50, rostri .65-.75, tarsi .70-80. Rostrum elongatulum, quodammodo coarctatum. Notæum fusco-olivaceum, in pileo statim aut sensim fuscescens. Gula ex albido cinerascens. Venter ex albido flavescens aut flavus, rariore albidus. Remiges primarii et rectrices fusci, et extus et intus rufo-marginati, rarissime innotati. Tectrices alarum superiores et remiges secundarii flavidalbido-marginati.

I admit none of the many nominal species established upon this elastic type; for they all run into each other. But I can distinguish three local races, the extremes of which are readily characterized, though their mutual intergradation—as perfect as we ever see in stationary insular birds—renders it impossible to put them on substantial specific bases.

Compared with the only large insular species (*validus*), these birds of the *stolidus* pattern fill the same position that *lawrencii* holds in relation to the larger continental species and varieties with which it is associated, though they are perfectly distinct from *lawrencii*. In the lengthened and constricted bill *stolidus* differs from the flatter-billed *lawrencii*, and copies a noticeable feature of *cinerascens*.

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a. VAR. *stolidus*.

*Myiobius stolidus*, Gosse, B. Jam. 168.

*Tyrannula stolidus*, Kaup, P. Z. S. 1851, 51.

*Myiarchus stolidus*, Cab., J. f. O. 1855, 479, et auct. March, P. A. N. S. P. 1863, 288.

*Tyrannula (Myiarchus) stolidus* var. *dominicensis*, Bry., P. B. S. N. H. xi. 1866, 90. St. Domingo.

*Pitangus (Kaupornis) stolidus*, Gray, H.-L. No. 5438.

*Myiarchus* ————— (“common tom fool”) March, l. c. 289.

*Myiarchus* ————— (“greater tom fool”), March, *ibid*.

*Myiarchus* ————— (“curiously feathered bird”), March, *ibid*. Albino.

M. fusco-olivaceus, pileo statim fusco, gulâ pallidè cinereâ, ventre flavo, pogoniis reetricum interioribus fusco et rufo fere dimidiatis.

*Habitat*.—Ins. Jamaica. St. Domingo. Hayti.

*Obs*.—To take this variety as a standard for comparison of the others (though of course it is no more “typical of the species” than either of the others is), I find its particular character in the combination of decidedly yellow belly with tail feathers so broadly edged on the inner web with rufous that this color and the fuscous occupy nearly equal areas. Either color may be restricted to one-third of the width of the web, but neither is ever wanting. The primaries are lightly touched with rufous on their outer webs; the secondaries and upper coverts are edged with soiled whitish, always evident, generally yellowish, in young birds tinged with rufous. The dark olive of the back is generally pretty pure, contrasting with the blackish cap; but in weather-worn plumages the upper parts are grayish-brown, including the pileum, and in such ragged state the wings show little edging, and the yellow of the belly looks pale and dirty.

This bird is best known by Jamaican material, but specimens from some of the other islands are indistinguishable. I have before me all the specimens upon which Mr. March (*l. c.*) based his remarks upon the smaller Jamaican “petcharies” or “tom fools;” there is certainly nothing but pure *stolidus* among them, though their individual variations are unusually great. Some of the skins appear to somewhat exceed the normal limits above given in size, and the differences in the size and shape of the bill are remarkable. One has a twisted bill; several others are albinotic, a condition to which the species seems singularly liable in this locality.

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Examining Dr. Bryant's typical examples of var. *dominicensis* (Port-au-Prince; *Younglove*), I can see that, as he says, the remiges and rectrices are a little more rufous than in most Jamaican skins; but I also find that they can be precisely matched by some of the latter, and consequently I am unable to recognize a variety in this case. Dr. Bryant's other varieties (*lucaysiensis* and *antillarum*), however, are quite different.

b. VAR. *phæbe*.

*Tyrannus phæbe*, D'Orb., Sagra's Cuba, Ois. p. 84. Excl. syn.

"— *sagræ*," Gundl., Av. Cuba.

*Tyrannula (Myiarchus) stolidus* var. *lucaysiensis*, Bry., P. B. S. N. H. xi. 1866, 66. Inagua and Nassau.

*Tyrannula bahamensis*, Bryant, *ibid.* p. 90 (in text). (Not *Empidonax bahamensis*, Bry.).

M. olivaceo-fuscus, pileo sensim obscuriore, gulâ et pectore cinereo-albis, ventre albo vix flavo-tincto, remigibus vix rufomarginatis, pogniis rectricum interioribus rufo et fusco fere dimidiatis.

*Hab.*—Cuba. Bahamas.

*Obs.*—The Cuban and Bahaman birds (which are precisely alike) ordinarily have the inner webs of the rectrices, as in Jamaican *stolidus*, nearly half rufous, half fuscous; but the rufous tends to be a little restricted, half the breadth of the vane seeming to be its maximum width, while it is frequently reduced to a mere edging, especially in Cuban skins. Variety *phæbe*, however, is well distinguished from variety *stolidus* by other characters, the chief of which is the almost entire absence of yellow on the under parts. These, in fact, are "white," shaded in front with ashy, and just tinged behind with yellow—the latter, however, is sometimes inappreciable. The rufous edging of the primaries is at a minimum; the whitish edging of the secondaries and upper coverts is at a maximum. There is not so much olive in the color of the upper parts as in var. *stolidus*, while the cap is much less abruptly darker.

Dr. Bryant says that his variety (*lucaysiensis*) is "larger than either the Jamaican *stolidus* or the Cuban *sagræ*," and probably this is so, on an average, but any difference there may be in this respect eludes me in comparing any except the largest *lucaysiensis* with the smallest of the others. I can only distinguish *lucaysi-*

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*ensis* from true *stolidus* by the nearly white belly, and find it absolutely inseparable from the Cuban *sagræ*.

I cannot find where (if anywhere) Dr. Bryant has characterized the Bahaman bird as "*bahamensis*;" but on p. 90, in text under "*dominicensis*" he says that the latter "differs from *sagræ* and *bahamensis* in the distinct yellow of the abdomen," etc., showing that his "*bahamensis*" is a white-bellied bird, and being from the Bahamas, it must be the same as *lucaysiensis*.

C. VAR. *antillarum*.

? *Myiarchus* sp., Taylor, Ibis, 1864. Porto Rico.

*Tyrannus (Myiarchus) antillarum*, Bry., P. B. S. N. H. 1866, p. 2. Porto Rico.

*Myiarchus antillarum*, Sund., Of. Vet. Ak. Forh. 1869, 599.

*Tyrannus (Tyrannus) antillarum*, Gray, H. L. No. 5544.

M. olivaceo-fuscus, pileo sensim obscuriore, gulâ et pectore cinereo-albidis, ventre albo vix aut non flavo-tincto, remigibus primariis minimè rufo-marginatis, rectricibus omnino immarginatis, sed creberrime macula rufa in apice pogonii interioris notatis.

*Hab.*—Porto Rico (*Bryant, Swift, Latimer*, Mus. S. I.). An Tobago (*Jardine*)?

*Obs.*—The Porto Rican form is almost a species. Local differentiation is here at an extreme, the better marked examples looking very little like the Jamaican *stolidus*, and not particularly resembling even the whitish-bellied Cuban *phæbe*. In extreme cases the tail feathers have no rufous edging at all, and the belly is pure white. But we have already seen, in the Cuban and Bahaman bird, that the belly fades away from the yellow that is found in the Jamaican, through every shade, till it is sometimes white; and we have likewise observed the reduction of the rufous to a mere edging of the rectrices; thence into *antillarum* is but a step. Some specimens of *antillarum* have the inner webs margined with rufous part way down; and the difference in this respect between these and some Cuban *phæbe* is not so great as may be found among different individuals of either of the other varieties. These examples of *antillarum* also show the most yellowish on the belly, this often exceeding the amount exhibited by Cuban or Bahaman skins. In the purest *antillarum*, however, the rufous is usually restricted to a mere trace at the end of the inner webs, and it may disappear altogether.

I could easily and plausibly describe *antillarum* as a species, but 1872.]

I am confident that my mode of treating it is a better way. In fact, my view is simply an amplification of the judicious query that Dr. Bryant inserted after the word "species" in the first sentence of his original description.

Avoiding all qualified expressions, and ignoring details, I may finally recapitulate and discriminate the three insular varieties of *stolidus*, thus:—

Var. *stolidus*: Belly yellow, tail feathers edged with rufous.

Var. *phæbe*: Belly white, tail feathers edged with rufous.

Var. *antillarum*: Belly white, tail feathers not edged with rufous.

Twenty-nine specimens examined of the several varieties, from the localities above quoted.

#### 9. MYIARCHUS TRISTIS.

*Myiobius tristis*, Gosse, B. Jam. 167, pl. 41.

*Blacicus tristis*, Cab., J. f. O. 1855, 480, et auct.

*Pyrocephalus (Blacicus) tristis*, Gray, Hand-List. i. 363, No. 5536.

*Minimus* inter minores, rostro lato depresso; olivaceo-fuscus, pileo nigrescente, gulâ e cinerea albidâ, ventre flavo, remigibus rectricibusque minimè rufo marginatis, illis extus et intus, his extus nec intus. Long. tot. 5.50–6.00, alæ et caudæ 2.75–3.00, rostri .60, tarsi .68, rostri lat. ad nares .33.

*Hab.*—Jamaica. Mus. S. I. and G. N. L.

*Obs.*—The smallest species of the group, and the one showing the least rufous on the tail and primaries of any of the smaller ones, unless it be *antillarum*. There is no rufous at all on the inner webs of the rectrices, but close inspection will show rufous traces on the outer webs of these feathers near the base, at any rate; rufous edging is evident on the outer webs of the primaries, and a very pale cast of rufous is more conspicuous on their inner webs. The upper wing and tail coverts show the same thing, but the edging of the inner secondaries is whitish.

This species does not particularly resemble any of the foregoing. It shows perhaps the broadest and flattest bill of any; the width of the bill, at or just behind the nostrils, exceeding half its length. In this respect it departs notably from *M. stolidus*, its geographical associate, and repeats *lawrencii* and *nigriceps*. Its affinities are really closest with the last named. Although *nigriceps* and *tristis* do not sufficiently resemble each other to render special comparison necessary, they are still evident geographical representatives—*tristis* holding the same relation to the insular forms with

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which it is associated, that *nigriceps* does to the continental form *lawrencii*, which it replaces in Northern South America.

Of the five following birds, referred by their respective authors and others to the genus *Myiarchus*, I have no information:—

1. *Myiarchus fasciatus*, Landb., Leybold, J. f. O. 1865, 402. Mendoza.
2. *Myiarchus cantans*, Pelz., op. cit. 182. Brazil. Probably=*tyrannulus*.
3. *Myiarchus tricolor*, Natt., Pelz. Orn. Bras. ii. 182. Brazil. Probably=*nigriceps*.
4. *Myiarchus gracilirostris*, Pelz., op. cit. 183. Brazil. Probably=*nigriceps*.
5. *Tyrannus tuberculifer*, D'Orb. and Lafr., Syn. No. 6. D'Orb., Voy. Ois. p. 307, pl. 32, f. 1, 2. Bolivia. *Myiobius tuberculifer*, Gray. *Myiarchus tuberculifer*, Cab. *Tyrannula tuberculifer*, Bp. *Pyrocephalus* (*Onychopterus*) *tuberculifer*, Gray, H.-L. No. 5523. An *Myiarchinus* *verus*? The description indicates a bird of the *Myiarchus* pattern of coloration, and D'Orbigny says that it is allied to *M. ferox*.